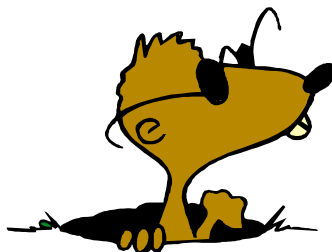


Name _____

AP Chemistry

The Mole



Definition of mole:

Converting from Mole to Mass:

- 1) How many moles of sodium bicarbonate (NaHCO_3) are there in 508 g NaHCO_3 ?

- 2) What is the mass, in grams, of 6.33 mol of NaHCO_3 and 3.0×10^{-3} mol of sulfuric acid?

- 3) Calculate the following:
 - (a) mass, in grams, of 0.773 mol CaH_2

 - (b) moles of $\text{Mg}_2(\text{NO}_3)_2$ in 5.35 g of this substance

 - (c) mass, in grams, of 1.906×10^{-2} mol BaI_2

 - (d) number of moles of NH_4Cl in 48.3 g of this substance

Converting from Moles to Number of Atoms/Molecules

- 1) How many oxygen atoms in 0.25 mol of $\text{Ca}(\text{NO}_3)_2$ and 1.50 mol of sodium carbonate?

- 2) Calculate the following:
 - (b) number of molecules in 0.05752 mol HCHO_2

 - (c) number of O atoms in 4.88×10^{-3} mol $\text{Al}(\text{NO}_3)_3$

Exercises

- 1) (a) What is the mass, in grams, of 0.0714 mol of iron (III) sulfate?

- (b) How many moles of ammonium ions are in 8.776 g of ammonium carbonate?

- (c) What is the mass, in grams, of 6.52×10^{21} molecules of aspirin, $\text{C}_9\text{H}_8\text{O}_4$?

- (d) What is the molar mass of Valium® if 0.05570 mol weighs 15.86 g?